VIRGINIA WILDLIFE

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Commission photo by Kesteloo

February Storm

The icy blast of winter shows itself at Hog Island on Virginia's James River. The gnarled roots are those of the southern cypress.

VIRGINIA WILDLIFE

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In This Issue

Cover Photo

A chicken-stealing opossum gets caught by the camera and bares his teeth menacingly at the photographer.

Commission photo by Kesteloo

VIRGINIA WILDLIFE gratefully receives for consideration all news items, articles, photographs, sketches and other materials which deal with the use, management and study of Virginia's interrelated, renewable natural resources:

WILDLIFE
SOILS — *CONSERVE* — WATER
FORESTS

SUBSCRIPTIONS: One Year, $1.00; two years, $1.50; three years, $2.00. Remittances by check or money order to be made payable to the Treasurer of Virginia. Local game wardens will accept subscriptions or they may be forwarded direct to Commission of Game and Inland Fisheries, 7 North Second Street, P. O. Box 1642, Richmond 13, Virginia.

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THE POWER AND THE GLORY

IT IS DIFFICULT for an editorial writer to forget today's newspaper headlines and force himself to survey the panorama of the future. It is hard to concentrate on quail cover restoration when one's own instinct for snrvival tends toward thoughts of atom-bomb shelters. In a world that now thinks in slogans, precise definition is difficult.

And the present is when clearest thinking about the future is most necessary for all of us.

This is being written a month before you can read it, but there is little doubt that the ensuing thirty days will see a greatly-heightened concentration upon our preparation for all-out war. Even if the final debacle can be avoided by diplomacy, or postponed from our immediate future, there will be massive concentration of materials and men; there will be intensive emphasis upon the production of goods for war.

And this can only mean further demands upon our natural resources. No country is stronger than the products that come from its soil, whether those products be iron ore or men, crude oil or wheat. It is inevitable that such demands must be met; the stream of history is bearing us into a dark tunnel and no one can tell what lies at the point where we emerge into the daylight again, whether there will be rapids, whirlpools or, we hope, placid eddies. And no one can estimate the extent of that black tunnel.

Our natural resources must again bear the brunt of preparation for war—but *that must never be made the excuse for insane exploitation and mad waste!* And it will be, unless every human deserving the accolade of CONSERVATIONIST is alert to prevent such senseless destruction of the good things of earth.

It has been said again and again—it must be repeated until everyone recognizes the truth—that the power and the glory of the United States stems from the rushing streams, the fertile soil, the stately timber and the earthshrouded minerals of this land that is ours.

So long as these sinews of strength endure, so will the power and the glory; if the strength is dissipated and lost, then with it will go our glory, our power, and, in the end, these United States of America.

Out of the fear and the fumbling, out of the dread and doubting, must rise the power and glory again. And the source of the arising must be out of the river valleys, the mountains, the great plains of America.

We must demand of our earth the fullest yield that it can give, in this time of crisis. Upon our resources depends the ultimate victory—not the empty glory of conquest but the truly ultimate achievement of total victory over all the forces that menace the world today.

The mission of the conservationists of America, then, is eternal vigilance over our resources. We must demand that they be expended wisely, for the good of all rather than the profit of a few. We must insist that there shall be no waste, no casual flinging away of our substance. We must be sure that selfish interests do not wrap about themselves the flag of patriotism, that exploitation not be allowed to operate in the guise of national defense.

It shall not profit America to gain the whole world, and in so doing lose its very soul. For there is our power and our glory.

—Courtesy Missouri Conservationist

The Intangible Values of Conservation

By PAUL B. SEARS

(Photos courtesy of A.F.P.I.)

THERE ARE MANY AVENUES of approach to conservation. One of the most fruitful and most neglected is that of accounting, or business analysis. Our whole situation with respect to natural resources can, in fact, be summarized by saying that we have, as a nation, rather consistently made entries in the *Income* column when they should have been reckoned as *Depreciation*.

Some years ago an unusually dry season created a serious fire hazard in the forests of southeastern Ohio, but it proved impossible by ordinary means to secure the release of sufficient state funds for the necessary patrol and other protection measures. As a routine matter I was approached along with other citizens interested in forestry to use whatever political influence I might have — it is negligible — in this worthy cause.

Instead, I suggested that we sit down and prepare a conservative analysis of the values which were at stake, the cost of protection, and a comparison of this cost with the allocations which a prudent business would make under similar circumstances. As you may guess, the cost was absurdly small when matched against routine expenditures made by business. As soon as these figures were presented to authorities at the state capitol, an adequate sum was released.

I am convinced that if this method were more generally employed by conservationists, many obstacles would become less formidable than they now seem. However, there are still many difficulties. This is particularly true in the case of forestry where long term capitalization is almost necessary. It is not easy to approach the average landowner and tell him, "It will pay you to establish and conserve a woodlot." In view of the pressure he feels to get the most out of every acre, it may not even be honest if we consider only those values which can be translated into cash.

The aesthetic appreciation of forests had as much to do with early attempts at conservation as did practical concern for the future lumber supply.

Among the many forms in which wealth exists, none is more real or more important than those which are intangible. And yet, since they are intangible, they are elusive and keep the tax experts awake at nights. Some, like the good-will of a doctor's practice, are considered to be negotiable although more than one buyer has found that they evaporate with the genial personality which built them up.

A good way to get at the intangibles is to focus our attention on quality, rather than quantity. There is plenty of beefsteak in the Argentine, there are plenty of jewels and domestic servants in India, but we do not use them as the basis of our choice in deciding whether we would prefer those countries to our own.

The present revolt of Asia and Africa against the West are, as Edgar Ansel Mowrer points out, neither due to hunger nor communist plotting, but rather it is due to the wish of men to be looked on as men, and not colonial vassals. We are inclined to forget that the idea behind the American Revolution has been and still is, the great explosive force in the modern world. Mowrer goes on to show that the Iranian oil troubles are not primarily economic but social, due

*Reprinted in condensed form from *American Forests*, by special permission.

to Jim Crow treatment of Iranian workers by the Europeans.

British Communists walked out—and stayed out—of a meeting in Moscow of the brotherhood in which they were asked to support propaganda which was obviously false. When they objected, "But that would be lying" and were laughed at for their scruples, British labor support of the Russian regime was lost, I am told. Better lose a fair fight than win a crooked one was the sturdy idea.

Dignity and self-respect are certainly intangibles, but so precious are they that when a man lets them go cheap, we all think he never had them to sell in the first place.

Or take intangibles of another sort. Why do men amass wealth and how, generally, do they use it when they have it? The miser is rare, the man who loves power over others, unfortunately, is not so rare. Both are despised. But the ends to which men generally use their wealth, and certainly those by which they wish to be remembered, are largely intangible, if you look behind the material evidence. American philanthropy-galleries, libraries, aid to the blind, endowments of learning-all antedate the problem of income tax exemption and estate taxes.

The conservation movement in our country has involved both kinds of values from the beginning. The aesthetic appreciation of forests had as much to do with early attempts at conservation as did practical concern for the future lumber supply. I suspect the same is true with other resources. Men will fight harder and more doggedly for something they think they or their grandchildren might someday need. This is more true today than ever before, for voices—even those of eminent scientists — soothingly assure us that no matter how badly we use our resources some bright lad will show us a way around the difficulty.

Because we are a practical and business-like people, there is a tendency in some quarters to rely too strongly on narrowly practical arguments for conservation. Thus the Army Engineers and Reclamation Services are required, very properly, to prepare budgets of cost and expected benefits. There is growing dissatisfaction with both entries, partly because of the difficulties of prophecy. But one of the greatest causes of mistrust lies in the fact that the operations of both groups involve hazards which lie outside the strict field of engineering and bring about changes in the landscape which affect its quality.

Every forester is aware of similar tensions within his own field of interest. Most foresters I know have chosen to work with trees because they like trees. Their original motive is an aesthetic, artistic impulse rather than an economic one. So unless they are callous indeed, they are sensitive to the problem of trees for harvesting versus trees for enjoyment. They have done very well at resolving this conflict.

Without for a moment playing down the urgent need of conserving woods, waters, soils, and wildlife for use, it is my belief that we shall do irreparable damage to our country unless we conceive of use within a proper framework of intangible values. No man in his senses is content with a house that provides only an adequate and convenient shelter. He wants it to be in the kind of neighborhood he likes, adorned and beautified according to his standard of tastes.

More and more he insists on the same values in the factories and business structures where he spends his working life. Most of our striving is for something beyond bare physical necessities. When a man is interested in nothing more, he is dead, though he continues to breathe. The same is true of a civilization.

So I suggest it is high time for a new emphasis in

Wildlife certainly has definite intangible values—values, which in many cases, transcend economic worth.

We must give thought to the kind of landscape we will conserve and consume.

conservation. It is not enough to plan the most efficient ways of conserving for future and continuous consumption. We must give thought to the kind of a national landscape within which we will conserve and consume. Do we want it to follow the pattern of those indoor, over-bred leghorns and dairy cattle, streamlined for phenomenal production of eggs and milk until nothing is left at the end but an exhausted carcass? I doubt if that is even good economics.

Or do we want to meet our material needs within a continent where generous provision has been made to insure that it is the kind of setting in which we like to live? Do we want to depend for the intangible qualities of our living only on those reserves for which no competing "practical" use can be found? Or will we insist on the same philosophy in our national home-making that any intelligent man follows in establishing a place for his family to live?

The question is urgent. There is unremitting pressure from those who would turn a nimble dollar by picking the landscape to its bare bones. Only by hard fighting has it been possible to keep back invasion of national monuments and parks set aside in perpetuity for the use and enjoyment of the people.

It is time to recognize that conservation goes far deeper than the matter of bread and butter. It involves the whole conception of freedom, dignity, and the American spirit.

Tangier Island

ONE of the more quaint islands to visit in the Chesapeake Bay area is Tangier Island located in the Bay mid-way between the Eastern Shore and the Northern Neck of Virginia.

Prospective visitors will find Tangier a fisherman's haven. Fishing and shell fishing are the only industries. The Bay around the island abounds in weakfish, spot, rockfish, croakers, sea perch, blue crabs and oysters. The largest crab floats in the Bay may be seen at Tangier.

Tangier is twelve miles from Crisfield, Maryland and less than 300 miles from New York. It is three miles by four in size and has a population of 1,010. The town is made up of three sections separated by canals, over which are bridges with arches in the center for masts of the fishing boats. Most of the houses are frame and the family graves are situated in the front yards. There is only one church, Methodist Episcopal, in denomination. There is also one school. No automobiles, street cars or horses are to be found. The people are modernly dressed except for sun-bonnets worn by women. Discovered and named by Captain John Smith in 1608, this unique town has changed little in the last century.

The island can be reached in several ways. Virginia Tours, Inc., at Richmond, can arrange a chartered bus, with complete arrangements for a round trip.

From Reedville, Virginia, a boat can be hired for a party for approximately $1.25, per person, round trip, taking nearly three hours to reach the island.

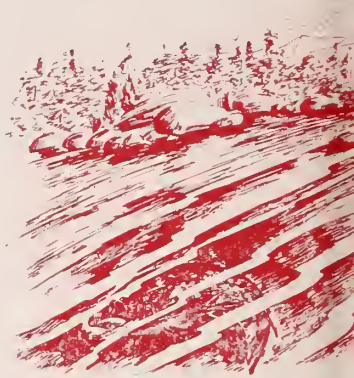
Dedicated to Improve Sport Fishing

Here is a brief outline of the purposes, policies, and program of the Sport Fishing Institute—a well organized, expertly staffed new private agency devoted to help sport fishing in North America.—Ed.

LEGIONS OF CONSERVATIONISTS, educators, outdoor writers, sport dealers, and fishing individuals during the past few months have been watching with enthusiasm the progress being made by the Sport Fishing Institute and its efforts to improve sport fishing.

The Sport Fishing Institute has accomplished much in a relatively short time. Founded as a nonprofit organization, the Institute was incorporated and headquartered in the District of Columbia in August 1949. Only a few months prior, a group of fishing sportsmen, aware of the lack of nationwide unity and concerned for the depleted fishing conditions in America, met to discuss plans for the formation of the Institute. Present at the first meeting were A. R. Benson, Ivar Hennings, Ed Wotruba, William Pflueger, Lou Caine, Leo Pachner, Paul Johnson, Henry Shakespeare, R. H. Balch, Robert Mortensen, D. H. Malay, David Comstock, Bert Ward, Frank Kimbrough, Dick Miller, and Graham Treadway. Shortly thereafter, the services of Dr. R. W. Eschmeyer, who was formerly in charge of fish work for the TVA for 12 years and was responsible for the development of year-round fishing in that area, were secured and as Executive Vice-President of the Institute, Dr. Eschmeyer set up a program designed to improve sport fishing in America.

A policy was adopted by the Institute based on a three-point program which would give direction, counsel and assistance to private, state, and federal agencies in the development and operation of their fish conservation programs. The first step in the program was that of direct service to operate nationwide programs and services to improve sport fishing opportunities for the individual. An intensified research program was also inaugurated for the purpose of encouraging and initiating increased knowledge and greater facilities for the maintenance of sport fishing and the final endeavor in the three-point program was to conduct a continuing educational program for the general public and for professional persons directly engaged with fish management.



On the basis of these three points, the Sport Fishing Institute is presently engaged in several projects. As part of its direct service program, the Institute is constantly securing information on the fish conservation programs of every state and federal agency. This information is being collated and an annual report will be made of the operations and activity of these agencies. These reports will assist in the planning of various state programs, eliminate duplication of effort and co-ordinate activities in the interests of better sport fishing.

A national personnel registry is being established for all professional specialists in the fish management field and the Sport Fishing Institute will operate a placement service and maintain records of all professional personnel in the fish conservation field.

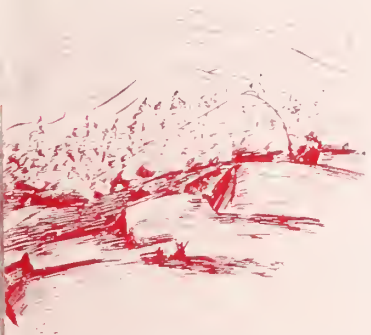
In the field of research, the Sport Fishing Institute is developing a comprehensive program to further better fishing management. The most important research projects now being considered will be directed to: siltation, vegetation control, fish management in reservoirs, farm pond and club lakes fish management, soil conservation, determining needed state regulations, pollution control, rough fish control, fish restocking, and balancing fish population. These projects will be supplemented by scholarship awards specifically made for the research program.

The Sport Fishing Institute is also establishing a series of fellowships and scholarships to attract competent personnel to bolster the ranks of professional

men in the field of fish management. Awards will be made to a designated number of educational institutions and the schools will be selected on the basis of merit and in relation to their geographical locations in the United States, Alaska, and Canada.

Aware of the need to educate and alert the public on present sport fishing conditions, the Sport Fishing Institute has developed a program utilizing periodicals, books, pamphlets, leaflets, motion pictures, film strips, and recordings.

The Sport Fishing Institute is also co-ordinating efforts with such allied organizations as the: National Wildlife Federation, Soil Conservation Service, Fish and Wildlife Service, State Departments of Education, American Forestry Association, Izaak Walton League of America, and all state and federal fish and game agencies and other established groups.



The Sport Fishing Institute constantly keeps professional workers in the fish management field informed of new developments and techniques through the media of the Sport Fishing Institute

Bulletin which is distributed each month to more than 3000 individuals interested in fish conservation.

The Sport Fishing Institute maintains offices in the Bond Building, Washington, D. C., and is supported by tax-deductible contributions of individuals, firms, corporations and other groups that are aware of the need to improve sport fishing. The activities of the Institute are governed by a Board of Directors. Among the officers are: A. R. Benson, President, R. H. Balch, Vice-President, Henry Shakespeare, Vice-President, and Graham R. Treadway, Vice-President. The Board of Directors include: Ed Wotruba, Lou Caine, Robert Mortensen, Bert Ward, Harold Gibson, Leo Pachner, D. H. Malay, Frank Kimbrough, H. W. Wittemore, Paul Johnson, P. J. Houser, and Dick Miller.

The Institute is the only organization now existing whose prime purpose and objective is to represent the individual sport fisherman in attempting to "shorten the time between bites" and working for the fishing fraternity towards the maintenance and creation of more fishing waters in America.

Outdoor Notes

By JOE AUSTELL SMALL

All Around Repair Kit

Place a small bottle of clear nail polish in your tackle box. It's ideal for quick repairs on chipped plugs, loose rod windings, damaged windings of bass plugs, files, etc. A drop of this polish on a mosquito bite will stop the itching almost instantly.

Keeping Minnows Alive

A little known secret of transporting minnows for long distances is to carry in airtight containers. A milk can with a tight cover is ideal for carrying large numbers. One or two gallon, wide-mouthed glass jars are ideal for carrying smaller amounts. Place fresh water in the container, put in minnows and screw lid on tightly. When jar is opened, change water and replace tight cover. Minnows may be carried safely and generally will remain lively for 24 hours by using this method.

Backwoodsmen Dumb?

Two backwoods fishermen spotted a game warden coming toward them. One had a fishing license, the other didn't.

The warden saw one of the men break and run. He gave chase. After a long, gruelling run he finally caught up with the man and asked to see his license. It was shown, and all was in good order. The officer left, muttering under his breath.

You guessed it: The man who didn't run didn't have a license—but of course he'd vanished by the time the warden had caught his friend. . .

A Challenge to

THE BUCK LAW

By HILBERT R. SIEGLER

New Hampshire Wildlife Biologist

TO RESIDENTS OF DEER STATES, one of the most significant papers delivered at the recent North American Wildlife conference in Milwaukee was on the subject of New Hampshire's deer herd.

The paper was presented by Hilbert R. Siegler, biologist of the New Hampshire Fish and Game Department at Concord.

New Hampshire's history of deer hunting dates from the 1630's. The history has been written, too—it was compiled by Tudor Richards of the Fish and Game Department in 1949. Probably no other state has such a long and complete record of its deer.

This state never has had the buck law. It has had open seasons every year, although most of the state was closed in 1878-1880. Seasons have been shortened from the year-around hunting of pioneer days, but have always extended for at least 36 days in most of the state.

The "buck" law is being questioned in many states.

The result? *New Hampshire recently has been harvesting more deer than ever before!* The kill was around 10,000 in 1947, 1949 and 1950, although it was somewhat lower in 1948. This is in a state less than one-sixth the size of Wisconsin, and with a population density just slightly less than Wisconsin's.

Incidentally, New Hampshire's deer harvest records are based on theoretically complete reports from hunters, submitted under threat of a $100 fine for failure to report a deer kill within 10 days. Since some hunters fail to report nevertheless, New Hampshire authorities estimate that the actual legal deer kill may be about 10 per cent higher than their figures indicate.

Significantly, the increase in New Hampshire's deer population from pioneer days until now has not been a constant one. Rather, the herd has had its ups and downs over the years. Contrary to what many would expect, *hunting pressure apparently had less effect on the deer population than habitat and timber wolves* in northern areas during the early days. In southern New Hampshire, year-around hunting with dogs was rough on deer before the modern era.

Here is the chronology:

1. In the 1630's, deer were very scarce in the virgin spruce and fir forests of northern New Hampshire as a result of the scarcity of browse, deep snows, and marauding wolf packs. Deer were fairly common in the southern part of the state.

2. As settlement proceeded, accompanied by land-clearing and until 1758 by year-around hunting, the deer population gradually declined in the southern part of the state from the 1600's until 1880.

3. In the northern part of the state, where there were few deer originally, the herd increased as part of the land was logged. The increase was gradual at first, but sharp from 1810 to 1830, the principal reason apparently being that settlers killed off most of the timber wolves. After 1830, however, wolves increased again and the deer herd declined.

4. In both north and south, the herd dropped to a low point by 1880. Significantly, this was the time when New Hampshire agriculture hit its all-time high. Also, there had been ruthless hunting.

5. From 1880 to 1915, deer increased everywhere in the state as logging boomed and the land grew back into brush. Also, considerable farm land was abandoned and became good deer habitat. Deer increased despite a generous bag limit of two deer, any age and either sex.

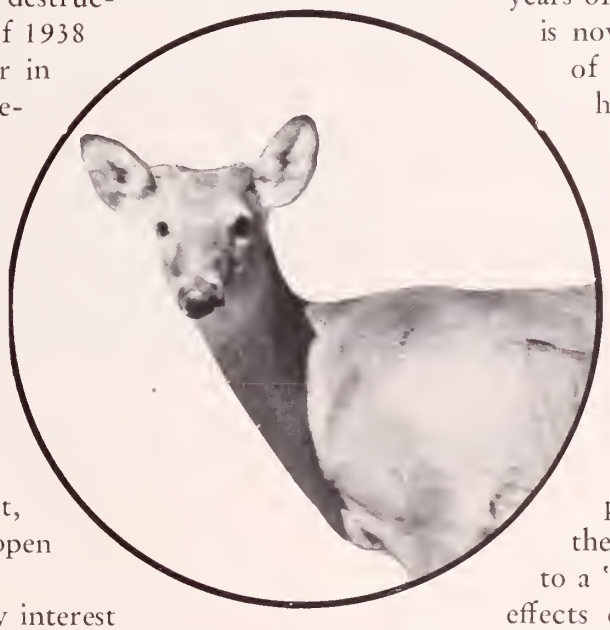
6. The deer herd dropped somewhat from 1915 to 1925, although the population remained several

Reprinted, with permission, from the Wisconsin Conservation Bulletin.

times as high as it had been in 1880. A factor contributing to the decline was that second-growth on New Hampshire's cut-over land, which had furnished abundant deer food, was growing out of the reach of deer. The logging peak came in 1905, and New Hampshire deer technicians believe a forest has its lowest carrying capacity about 15 to 20 years after it has been clear-cut, when second-growth is in the pole stage and there is no cutting.

7. In 1925 the bag limit was cut from two deer to one. Thereafter the herd gradually increased until 1936. *Farm abandonment continued to supply new deer range, and the cut-over areas became better range as logging increased again.*

8. From 1936 to 1950 the herd increased rapidly over a high proportion of the state. One reason appears to be that the destructive New England hurricane of 1938 felled large amounts of timber in New Hampshire, permitting regrowth of abundant browse within the reach of deer. *Present-day logging also is beneficial in a high proportion of cases, since it is conducted on a crazy-quilt pattern which results in new growth of all ages.* Farm abandonment is continuing; 83 per cent of New Hampshire now is in forest, whereas 51 per cent was in open land in 1880.



Doe deer sometimes must be taken to reduce herds.

There is more than ordinary interest in what has happened in big Coos county, which comprises the northern part of New Hampshire and includes about one-fifth of the state's area. Here, contrary to the trend in the rest of the state, the deer herd has been declining somewhat since 1940.

Three years ago a guide's association began agitation to invoke the buck law in northern Coos county "to increase the deer herd." This is an area that is thinly settled, largely forested, and highly dependent on the recreation industry for a livelihood.

Investigating, research men of the New Hampshire Fish and Game Department found, *the trouble with Coos county was under-shooting and over-browsing, in spite of yearly any-deer hunting!* They discovered that 71 per cent of the harvested deer were being shot within one mile of the few roads in the area—the rest of the county being largely unhunted.

So the solution being worked out for Coos county is not to go for the buck law, which would make matters worse, but rather to open more roads so that hunters can get into the back country and shoot more deer. Also, since the winter deer yards were being reduced in number by clear-cut logging, the remaining yards will be preserved and managed for deer. The guides now agree that these remedies make more sense than the buck law for their situation.

Except for Coos county, and except for a few townships in the most rugged sections of the White mountains, New Hampshire is reasonably accessible to hunters. There is no indication that the deer herd is taking too much of a beating near centers of population, for after all these years of any-deer hunting, the harvest is now highest in the southern half of the state. Parts of the state have, however, been given closed seasons occasionally, although the entire state has been open during many deer seasons.

It is highly illuminating to compare the deer records of any-deer New Hampshire and the buck-law Vermont. These two adjacent states are so much alike in size, latitude, topography and forest cover that their experiences almost amount to a "controlled experiment" on the effects of the two regulations. One difference is that New Hampshire has a somewhat higher population and hunting pressure than Vermont.

In Vermont, as in New Hampshire and many other deer states, the deer harvest has shown an upward trend since the 1920's. *But if the buck law ever did Vermont hunters any good, the effect was temporary. Vermont shot more deer than New Hampshire only from 1931 to 1935.*

Since 1935, New Hampshire has harvested more deer than its neighbor every year, and by an increasing margin. In recent years the state-wide average legal deer kill in New Hampshire has been 1.1 to the square mile, while Vermont's has been under 0.6.

Buck-law Vermont has a far greater waste of deer than New Hampshire, so far as legal hunting is concerned. Since 1942 the reported accidental, out-of-season, and illegal deer kill in Vermont has been from two to more than three times as high as in New Hampshire. Apparently if any Vermont deer hunt-

ers are better off than their New Hampshire opposite numbers, it is the poachers rather than the law-abiding sportsmen.

Biologist Siegler pointed out that no one has made an intensive study to compare browse conditions in New Hampshire and Vermont, but that technicians from both states have made inspection tours in both areas, and have come to the conclusion that *New Hampshire is much better off than its neighbor*. Even in New Hampshire, however, an incomplete survey indicates that 28 per cent of the winter deer yards are heavily over-browsed.

New Hampshire's deer are in generally good condition, as witness:

1. Average weights are good. Dressed weights of 118 buck fawns were found to average 65 pounds during the 1950 hunting season. Mature bucks, 4½ years or older, averaged about 175 pounds. A number of bucks of more than 300 pounds live weight are shot each year.

2. Reproductive organs collected from 55 does during the 1950 season indicated the state has an average reproductive rate of 1.7 per doe. This is the same as New York found on good range in the southern part of that state, and much higher than has been found in various over-browsed areas in New York and elsewhere.

The New Hampshire record does not bear out the idea that hunters will shoot more does than bucks. On the contrary, more bucks are shot. Bucks have comprised between 52 per cent and 61 per cent of the harvest every year since 1937, which is as far back as these records go.

This favorable sex ratio may, however, partly result from New Hampshire's practice of *permitting hunting during the rutting season, when bucks are easier to shoot than later*. The New Hampshire deer-hunting season customarily has included the entire month of November in much of the state.

Photo by U. S. Forest Service

When populations build up to dangerous proportions, deer can eat themselves out of house and home, making drastic control regulations necessary.

Siegler entitled his paper, "Has The Lack Of A Buck Law Harmed New Hampshire's Deer Herd?" His conclusion: No. "If the shooting of does is detrimental to a deer herd, it is difficult to explain why the annual kill of deer in New Hampshire continues to rise, unless factors other than hunting play the decisive role," he declared.

Bound Copies of Virginia Wildlife Available

Volume 12 consisting of the twelve issues of *Virginia Wildlife* for 1951, is now available to all our readers in an attractive cloth-bound, gold-stamped, and hard-covered book. These volumes are available at cost, which is $3.50 per volume. The Commission has had only 50 sets of the 1951 issues of *Virginia Wildlife* bound, and they will be sold on a first-come, first-served basis. Get yours early. Make remittances by check or money order to the Treasurer of Virginia.

VIRGINIA WILDLIFE

CONSERVATIONGRAM

Late Wildlife News . . . At A Glance

WARDEN HARRISON DIES: Prince George County game warden Thomas Harrison, 33, died suddenly on January 6 following a protracted illness connected with his former Army service. Tom was a patient on several recent occasions at McGuire Veteran's Hospital, Richmond, but was released in October when his condition seemed improved. At his home in Prince George County, on January 6, he developed a hemorrhage and was rushed to the hospital where he died suddenly. Burial services were on Tuesday, January 8 at the Episcopal Church near Brandon Road in Prince George County. Tom entered the Commission's service as a warden in November 1949. He was popular and well thought of and his premature death is grieved by his many friends.

WILDLIFE CHARTS AVAILABLE: The Commission has just received 250 sets of wildlife charts suitable for use in schools, camps, clubs, etc. These are 4-color process charts, 20 x 30 inches, covering Virginia summer birds, owls, and land mammals. They are being offered for sale at cost, $1.50 per set of four in a mailing tube, or 50¢ for individual charts. Orders must be prepaid and sent to the Richmond office of the Game Commission. Checks should be made payable to the Treasurer of Virginia. No free copies have been authorized.

BACK BAY BASS FISHING RESULTS: An estimated 8,000 black bass, weighing approximately 11,000 pounds, were removed by anglers from Back Bay in the five-month period from June through October of last year, Dean Rosebery, assistant chief of the Commission's fish division reports. From tag returns emanating from sportsman anglers using the Back Bay area, it is estimated that a mere six per cent of the bass ranging from 10 inches up were removed. "It naturally follows," Rosebery says, "that Back Bay could stand a fishing pressure of 10 times that of the past year without seriously depleting the bass population."

APPLICATIONS BEING RECEIVED FOR LESPEDEZA: Now is the time to prepare for the spring planting program for wildlife. The Commission will again furnish planting stock to interested landowners and sportsmen who are willing to provide additional food and cover for quail and rabbits by planting food strips.

According to Chester Phelps, game division chief, the following materials will be available for distribution: shrub lespedeza plants and seeds, serecia lespedeza seed, wildlife food mixture seed, and milo maize.

Applications for the free planting materials should be submitted by February 15. Interested groups or persons should contact their local game warden, soil conservationist, county agent, district game technician, or the game division in Richmond, and make their requests known.

GAME WARDEN'S LIFE ISN'T ROSY: The life of a game warden isn't a rosy one, as many seem to think. Long hours and little sleep is the rule with them as is shown by the Warden Activities Report for the month of December.

During the thirty-one days of December the Commission's 138 game wardens, conservation officers, and warden supervisors traveled 285,000 miles over the state, making a total of 422 arrests of game, fish, and dog law violators, and checking 25,206 dog, fishing, and hunting licenses.

During December the 138 wardens worked a total of 31,835 hours for an average of 230 hours for each warden. Far above average was 376 hours worked by a few of the wardens. Considering that there are only 720 hours in a 30-day month, some wardens were in the field over 50 per cent of the entire month.

GAME SEED-STOCK REMAINS ADEQUATE: "Worried hunters who are concerned about the outlook for the 1952-53 hunting season because of the heavy kills of game this past season can stop their fretting," says I. T. Quinn, executive director of the Commission of Game and Inland Fisheries, "for despite the bumper crop of game killed this year, there still remains a seed-stock adequate to fill all the coverts for next season's hunting just as abundantly as last year."

Mr. Quinn went on to say that next year's kill will not be affected by the kills of the past season, but rather the nesting and rearing conditions of early spring and summer will determine the outlook for the coming season. "If nothing beyond the realm of our control takes place, such as severe drought in summer, or an outbreak of disease within the game species, then we may safely say that the 1952-53 hunting season will be every bit as good as the one just past," Mr. Quinn said.

In conjunction with the assurance of an adequate seed stock, the Commission will continue to enlarge and expand upon its present habitat improvement plan during 1952, for it is convinced that this is the surest way of increasing our game supply for future generations.

FEBRUARY —Critical

When heavy snows and low temperatures set in, wildlife faces a critical period.

Corn is an all around perfect food for game. Note snowless area beneath pines where corn is scattered.

Snow and freezing weather, even for a few days, can be disastrous to quail.

When the going gets tough, the Commission sends out a S. O. S. to all game clubs to help feed wildlife. Commission furnishes grain.

Month for Game

Shelter and feeding station for quail, rabbits, and songbirds.

A few ears of unshucked corn in the fields is a godsend to wildlife when the critical time comes.

Wire pocket nailed to a tree makes convenient holder for suet, nuts, biscuits, etc.

Operation Wildlife: A young man with a bag of food on his shoulder sets out on an emergency feeding mission for game.

Hog Island Waterfowl Refuge

By CHARLES GILCHRIST, JR.

The recently acquired Hog Island refuge on the James River is rated as one of the best waterfowl resting and feeding grounds on the entire Atlantic Flyway.

(Commission photos by Kesteloo)

IN FEBRUARY, 1951, the Virginia Commission of Game and Inland Fisheries took possession of Hog Island and 200 feet of the edge of the adjacent high land. The 1,900-acre tract of land was purchased from J. Harvie Martin of Richmond, Virginia, for the purpose of establishing a waterfowl refuge, thereby, hoping to increase the number of waterfowl using the lower James River.

Hog Island is located in the southeastern Virginia coastal area on the right bank of the James River, near the settlement of Bacon's Castle, in Surry County. It is located approximately two miles diagonally across the river from the lower end of Jamestown Island. Because of its location and its terrain it was put to use by the early colonists. A sign erected on Route 10 at Bacon's Castle reads as follows: "On this point, in James River nine miles Northeast, the settlers kept their hogs in 1608. When abandoning Jamestown in June, 1610, they stopped at the Island for a night. The next morning, proceeding down the river, they met a messenger from Governor Lord Delaware, who had just arrived, and returned to Jamestown."

The Island was once separated from the mainland by Hog Island Creek, but is now connected by a causeway and a road which have been in place for many years. On the island portion there are numerous tidal streams, hand dug canals, mud flats, and marsh areas that surround the lower ridges not subject to inundation. Since the property is actually a point of land extending into the James River, it is subjected to constant wave action, that, through the years, has greatly reduced the acreage of highland. This is particularly noticeable along the east and west shores where roads once located close to the water, have been completely washed away. The breakdown of the land is as follows: approximately 1,100 acres of marsh and open water, 200 acres of crop land, 380 acres of timber, and 120 acres of brushland.

That maximum usage of the area by waterfowl might be obtained, the Commission of Game and Inland Fisheries, with the aid of the U. S. Fish and Wildlife Service, has set up a long range management plan. This plan will be discussed generally in the following order: farm land and brush land, marsh and water areas, and woodland.

The principal purpose of the farm land is to produce suitable food for geese, with the secondary purpose being to produce revenue for the project. In order to do this, and at the same time to get a sound crop rotation so as not to deplete the soil, the Soil Conservation Service was called upon to make a soils map of the area, test the soil for fertilizer and lime requirements, and help draw up a farm plan. This was done with a two year rotation of corn, small grains, and lespedeza on most of the fields, with a mixture of ladino clover and Ky 31 fescue on the rest of the fields. It is hoped the soybeans can be included when the weeds are brought under control by spraying and cultivating.

Most of the fields lie on ridges of high land (ap-

proximate elevation four feet) with water on either side and a line of brush between the fields and the water's edge. The plans include removing this brush, by burning and bulldozing, and the planting to a permanent sod, as they are too wet to cultivate. By removing this brush edge the amount of each field that can be utilized by the geese will be greatly increased—they do not like to feed too close to woods or brush. It will also open up these fields to ducks, as the baldpates, and the mallards, which come up on the land to feed on the small grains.

The plans for the marsh and water areas are to construct a series of low dikes and control structures creating a series of shallow impoundments, ranging from 15 acres to 500 acres in size, that the water level may be controlled. At the present time the marsh and water areas produce little in the form of natural foods. This is due, to a large extent, to the carp action causing turbidity of the water in these areas. When the dikes and the control structures are finished, it will be possible to control the water level and the salinity of the water to some extent. As it is now, the water on the upper side of the island is fresh, while there is an approximate 20 per cent normal sea salinity on the lower side of the island.

The management will be broken down into the two following categories: the draw-down system and the constant water-level system. In both systems the first step will be carp control and eradication.

The section of the area that is under the draw-down system will be drained in the spring and the control gates will be closed. Then the areas will be planted with millet *Echinochloa walteri, E. crus-galli,* wild rice *Zizania aquatica,* smartweeds *Polygonum* spp., and other food plants. The areas will then be kept drained low until these plants have dropped their seed in late summer and early fall. When the ducks come in, the water will be raised gradually until the pools are full around the first of December. The reason for filling the pools gradually is that the dabbling ducks will be able to feed in areas normally too deep for them when the pools are full. By using this method it is possible to get maximum utilization of the areas. In this type of management the ducks leave enough seed to reseed the area the following spring when it is drained again, and the same procedure is followed as before except that the area does not need replanting.

On the areas to be managed by the constant water-level system the pools will be flooded to an average depth of one or two feet and planted with wild celery *Vallisneria spiralis,* pondweeds *Potamogeton* spp., widgeon grass *Ruppia maritima,* and other aquatic plants, depending on the salinity of each pool. These pools will be kept at a constant water-level throughout the year and will only be drained to control the carp and obnoxious plants.

A series of nursery ponds has been established, that there will be available planting stock to use on the larger areas when the control structures are completed. After the larger areas are planted it is planned to continue operation of the nursery ponds and, thereby, have a source of plants available to interested marsh owners in the state at a minimum cost. This cost will be low and will not be charged with any intention of making a profit, but will only cover the cost of handling and shipping the plants.

The areas now in timber will be managed on a selective cutting basis. By this method none of the areas will be depleted of trees at one time and will leave windbreaks throughout the area. These wind-

(*Continued on page 22*)

The aim of the Hog Island project is to hold and increase the number of waterfowl using the lower James River.

Commission biologists inspect the open areas of Hog Island to determine best planting program for waterfowl.

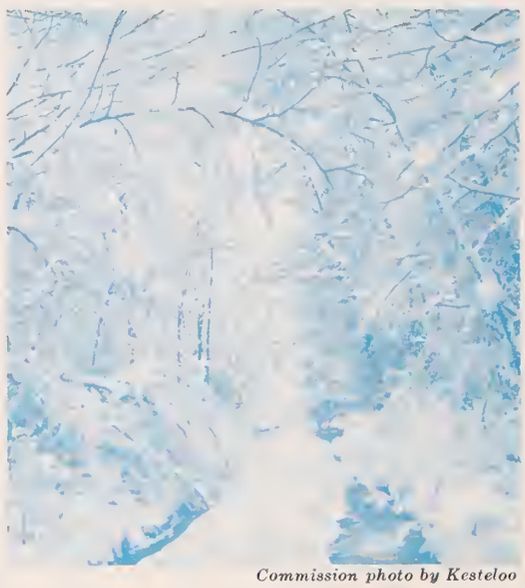
What Woodland Roads Mean to Wildlife Management

By NED THORNTON

ROADS, be they super highways, with which most of us are familiar, or the miles of woodland roads that penetrate the vast forest areas of Virginia, mean a lot to wildlife and to its management. Without this network of highways and roads, both the sportsman and the wildlife worker would be seriously handicapped.

In the nation as a whole, there are approximately 33 million hunters and fishermen who spend, directly and indirectly, about 9 billion dollars a year in the pursuit of their sport. That is more money than the combined income from hogs and cattle in America's market. In 1949 the money spent for hunting and fishing exceeded the money spent for gate admissions on all spectator sports, including football, basketball, boxing, and baseball. In Virginia there were nearly 400,000 licenses of all kinds sold to hunters and fishermen. In other words, hunting and fishing is BIG business!

The tourist business in Virginia is also big business. Many of the tourists who annually visit our Commonwealth come to hunt and to fish. Virginia's superb highways contribute greatly towards the attraction of tourists, but the low-grade forest road appeals to the seeker of outdoor recreation more than the cross-country highways.



Commission photo by Kesteloo

Forest roads aid materially in the promotion of wildlife management. This snow-covered road in a national forest has many uses.

The forest or woodland roads, generally having a low rate of traffic during most of the year, is valuable as a tool in wildlife management in at least three definite ways.

First of all, a wide network of forest roads aids materially in the distribution of hunters and fishermen. Anyone who has seen the concentration of hunters in the vicinity of the Big Levels Refuge or the North River Refuge on the opening day of deer season knows how serious this can be. Concentrated fishermen on the opening day of the trout season in the vicinity of such streams as Piney River, Pedlar River, and Ramseys Draft, are even worse. It is notable that the average hunter or fisherman seldom gets far from the road, thus, the more forest roads available for his use, the less the concentration of hunters and fishermen. With a better distribution of the sportsmen, we can expect a more uniform and better harvest of our wildlife resources. One of the problems that we are facing is over shooting in some areas and under shooting in others. Anything that can be done to break up concentrations of sportsmen is definitely of value to the sportsmen and promotes more efficient utilization of the game crop. The safety value to the hunter is not to be underestimated.

A good network of forest roads, likewise, contributes to the efficiency of the wildlife workers in the forest areas. The men who do the spadework for environmental improvements are able to work more on the job instead of walking a large percent of their time to and from the work areas. This is true for the law enforcement men of the Forest Service and of the Game Commission. The forest can be better protected against game law violators as well as from the ever-present danger of forest fires. Without efficient law enforcement and the protection of wildlife, all other work in its behalf is wasted effort.

In addition to the above values attached to forest roads, another concrete value may be considered; that is, the part that a good network of forest roads plays in actually improving the environment for wildlife species.

The basic principles for managing wildlife are the same as those for managing any other living thing. They are, briefly, that wildlife must have an

abundant food supply and sufficient cover to enable it to protect itself from severe weather and from its natural enemies. The food and cover must be present every day of the year. Game populations, like the populations of all other living things, are limited to the number the minimum amount of food and cover will support during the season of the year when food and cover are most scarce. Finally, wildlife, particularly the game species, must be considered as a crop, comparable to any other product of the land. Forest roads contribute generously toward providing for this food and cover.

Forest and woodland roads contribute to a better environment for wildlife in many ways. It is common knowledge among sportsmen that wildlife is attracted to openings in the forest. It is also common knowledge that large unbroken tracts of forest lands support small wildlife populations. Forest roads aid materially by creating the necessary openings in the forest canopy. The ruffed grouse, for example, is not likely to penetrate the deep unbroken forest over 300 feet because of a deficiency in sunlight and food. The female grouse with her young is attracted to openings because many of the necessities for her welfare occur only in connection with openings, or at least they are found more abundantly there.

Studies on one of the western national forests showed that truck trails and fire breaks increased the distribution of deer and increased the amount of herbaceous cover along the roads and it was utilized heavily by these animals. This same thing was shown on the Big Level Refuge in Augusta County. The wild turkey needs openings the year round to get succulent vegetation. Roads contribute generously to this need, especially, where the shoulders and edges are planted to such foods as orchard grass, ladino clover and others.

Woodland roads help better distribute sportsmen thus assuring a more uniform and better harvest of our wildlife resources.

Commission photo by Shomon

Commission photo by Kestelоo

Virginia trout streams are getting more popular each year as good roads and an effective restocking program provide good creels for sportsmen.

Woodland or forest roads may, under some circumstances, be a "two-edged" sword. They may on the other hand attract game to openings created by the roads, only to be destroyed because it is accessible to poachers or the "automobile" hunter.

There is always the danger of making an area too accessible to the hunter and fisherman and, thus, causing over-exploitation, but the benefits derived from opening up an area by roads usually more than compensates for the possible dangers. Where danger of over-exploitation becomes a reality, such roads, on publicly owned lands, might be closed.

In summary, forest roads when treated properly contribute generously toward providing succulent vegetation, abundant insect populations, and other foods for wildlife. They provide dusting areas in bare mineral soils and make available a source of grit and gravel to the scratching birds. They provide areas of open sunlight for small birds and animals to dry themselves after rains. Food becomes available to wildlife along the exposed road banks more quickly after snowfall, due to the rapid melting of the snow. The Commission of Game and Inland Fisheries and the U. S. Forest Service have had a cooperative wildlife management program in progress on the two national forests in Virginia since 1937. The improvement of old logging roads and other forest roads for wildlife, by widening and planting, makes up a large portion of the work being done under this program. For a number of years the establishment of clearings formed the bulk of the

(Continued on page 22)

Virginia's Game Bird Series

THE RUFFED GROUSE

LIKE A FEATHERED BOMBSHELL, the ruffed grouse thunders from under-foot and is gone, leaving in its path branches, trees, and bushes, always just between it and the hunter's gun.

This stately bird, to those who have seen or hunted it, needs no description. A quick glance as it thunders past will mark it as a large, reddish-brown, quail-like bird about the size of a bantam hen. Actually it weighs about 20 ounces. Its distinct neck ruff of black glossy feathers and square-cut tail will mark it with certainty. There is no mistaking this bird, for it has no close relatives in Virginia, and no other bird of similar size or habit is found in the brush mountains, coves, ravines, and hillsides.

The habit of drumming is the most unusual of all characteristics of this bird. Beginning like the loud beat of a big drum or the explosion of a single cylinder of a Model T Ford far out across the mountain, it gradually increases in speed until it sounds as though all four cylinders of the Model T are hitting in rapid succession, ending in a burst of speed so fast that one "beat" cannot be distinguished from another.

The sound is produced by the male's beating the air with his wings as he stands firmly braced on his favorite log and it represents the call of the male to the female. There is good reason to believe that the male grouse is polygamous, and is eager to accept as many females as he can gather into his lair. He does not, however, aid in the care of the eggs or the young, for these chores are left to the mother bird The female builds the nest in April or May in a depression at the base of a tree or log, usually near a clearing or road. She lays her 11 to 14 pale-buff eggs and incubates them for 21 to 24 days. The young are then hatched "on the run" and can fly within a week.

The State Game Commission, in cooperation with the U. S. Forest Service, which controls a good bit of the best grouse range in the state, is carrying on a program of systematic improvement of wildlife habitat on the grouse country, with woodland clearings as its basis. The brushy habitat, interspersed with evergreens for winter cover is grouse habitat, a condition which is more quickly brought about by small clearings. The Commission feels that this work will encourage the bird's preferred foods, thus, increasing its numbers and range in Virginia. With intelligent management, our "mountain pheasant" should be here to thrill us for as long as there is a mountain in Virginia.

Virginia's Inland Fish Series

THE WHITE CRAPPIE

THE WHITE CRAPPIE, known to some people as silver perch, and to others as the speckle, is not quite so well known for its abundance and wide distribution as is its sunfish cousin, the bluegill; but its "claim to fame" is its tastiness as a table delicacy.

The white crappie was originally widely distributed from Nebraska eastward to Lake Ontario and southward through the Ohio and Mississippi rivers to Texas and Alabama northward along the coastal plain to North Carolina and Virginia.

The crappies' predominating colors are bright silver with black mottlings, but the intensity of the coloring varies greatly. The white crappie has from five to seevn dorsal spines—usually six—and the black crappie, or calico bass, as it is often called, has from six to ten spines—usually seven or eight. The outline of the back of the white crappie is more of an S-shaped curve than that of the black crappie.

This fish is found principally in our lakes, ponds, and slow moving, sluggish waters, impounded waters being best suited to its requirements. They are not adapted to fast moving, cooler waters of the mountains.

This species spawns in the spring and early summer, with the male being the one to clear off the nest and guard it.

It is a carnivorous fish that feeds on insects, worms, crayfish, and fish. It has been known to reach a length of 18 inches and a weight of 2½ pounds. A specimen was caught weighing four pounds.

This species is an important game fish in the midwest and in the south, taking a hook well, especially when minnows are used as bait. Fishermen should, however, be cautious when pulling their catch in, for its mouth is tender and, without care, it may pull off the hook.

The Commission's fish division stocks around 50,000 crappies in the waters of Virginia each year among which are some white crappies and some black crappies. Many of these are adults and they are stocked in ponds, lakes, and slow moving rivers, where they will thrive, breed, and reproduce. Here lies one of the great values of the white crappie; it abounds in waters where other fish do not. Without this remarkable ability to live, reproduce, and abound in silty, sluggish waters, many "a fishin' hole" would be empty of fish.

WHAT WOODLAND ROADS MEAN TO WILDLIFE MANAGEMENT

(*Continued from page* 19)

work, but for the last few years, work has been concentrated on the improvement of roads and trails for wildlife. The roads and trails, where widened and developed properly, produce the same value as that of a clearing and, in addition, influences a much larger area of the forest and allows a greater ratio of edge effect than a clearing. Considerable work has been accomplished along this line and well over 600 miles of roads and trails have been developed. In addition, something over 3000 clearings have been established in areas where there are no roads to provide for the needs of wildlife. All of these roads, trails and clearings have been, or are in the process of being planted to grasses, clovers and lespedezas for the sole purpose of improving wildlife conditions on the forest.

Thus the relatively inexpensive forest road contributes much to the betterment of the wildlife resources in the Commonwealth—values far out of proportion to their cost. Furthermore the enjoyment and recreation they provide for the hunter and fisherman in the pursuit of his sport is an intangible value that cannot be easily measured but is very definitely present.

HOG ISLAND WATERFOWL REFUGE

(*Continued from page* 17)

breaks will serve to reduce the wind action on the pools and aid in keeping the turbidity low. Also, it will give the ducks an area where they can find protection from the wind in severe weather.

By using the management system now set up it will take a number of years to bring the area to full production. When it is completed it will offer the waterfowl varied types of habitat. The ducks will have submerged aquatics, seeds from the draw-down system and grazing from the grain fields. The geese will have available the submerged aquatics and can graze from the grain fields.

It is anticipated that after the initial cost of developing the area this project will be practically self-supported by the revenue brought in from the sale of grain, excess corn, and fishing and trapping rights.

CONSERVATION WILL BECOME REALITY WHEN—

People who do have good hunting and fishing opportunities begin to take interest in the problems of those who don't.

Publishers and advertisers reverse the present policy of playing up ways to take more wildlife, and playing down ways to save more.

Plundering the resources becomes a crime at least equivalent to the crime of plundering people who plunder the resources.

Conservationists spend as much time talking conservation to the people as they do to each other.

Government policy becomes directed to the basic interests of the people instead of to the economic interests of the policy-makers.

Sportsmen realize that the goal of management is not the volume of game and fish they want, but the quantity the habitat will support.

We understand that the magnate whose factory wastes poison a river, or the landowner who destroys his soil may have taken far more from the world than he was worth to it.

We realize that what the exploiter takes with him out of this world is not the wealth he accumulated, but the lives and welfare of present and future generations.

We learn that democracy and freedom cannot exist without it.

Werner O. Nagel
Missouri Conservation Commission

P.S. Conservation will become reality when ALL the people of this state are aware of these problems enough to say "Amen" to the above and begin doing something about it. J. K.

Field Force Notes

We Need More Of This

C. P. Manly, county agent for Bath County, submits this short report of Wilton Brinkley, Jr., a 15-year old member of the Bluegrass Hollow 4-H Club, in the hope that others might follow through with similar projects in their counties.

The boys of the Bluegrass Hollow 4-H Club, in Bath County, decided that a very worthwhile project for 1951 would be to seed a number of acres to wildlife foods. Six of the boys seeded twelve acres at scattered locations, to milo, buckwheat, soy beans, and a mixture of orchard grass and ladino clover.

"There are 58 hunting and fishing clubs in Bath County, seven of which are in the vicinity of our food plants. Three of the clubs made contributions toward our project, to encourage us in our wildlife conservation work," Wilton said. "These contributions were generous, and on our 4-H Achievement Day, seven of us were presented with shotguns and rifles, ranging from 22 caliber repeaters to 30-06 deer rifles. We felt well paid for our efforts."

Six other members now have chosen the same type of project as the Bluegrass Club. It is hoped that next year many more 4-H boys will select "Wildlife Conservation" as their projects.

What do you think, Virginia sportsmen? Why not help this thing grow? Get behind the boys and girls in your community and encourage them. That's all they need—just a little incentive. You can do it, and you will be repaid with more game and a lot of future sportsmen.

Illegal Hunting Proved Costly To Nimrods In Two Counties

Deer hunting during closed season and at night in the case of several proved very dear to the participants. When arrested and brought into the court of Trial Justice R. S. Wright, Jr., in Woodstock last November, by Game Warden Elon D. Sheetz and Game Conservation Officer Fred W. Hottle, the following fines were meted out:

Harper Striekler, New Market, pleaded guilty to illegal possession of deer meat, $50 and costs.

Guy Wealthy, Mount Jackson, hunting deer at night, $50 and costs; killing a doe deer, $50, and $25 replacement, and costs; and hunting during closed season, $25 and costs. Total $162.25.

Earl Bowman, Mount Jackson, hunting deer during closed season, $50 and costs; killing doe deer, $50, plus $25 replacement, and costs; and hunting deer at night, $25 and costs. Total $162.25.

Walter Baker, Jr., Mount Jackson, hunting deer at night, $25 and costs; hunting without a license, $25 and costs. Total $68.50.

Warrick Burruss, Mount Jackson, hunting deer during closed season, $25 and costs; hunting deer at night, $50 and costs. Total $83.50.

Another game conviction was lodged against Nevin Showman, Edinburg, hunting without a license, $10 and costs.

The multiple deer violations were rounded up by the two local game officials. The doe was killed in the Jerome section.

Fall Fishing Pays Dividends

Elbert W. Sly, from Triangle, Virginia, just recently submitted to *Virginia Wildlife* this picture of a bass he caught last October 9, at Timber Branch Pond, near Cherry Hill, Virginia.

Photo by Elbert Sly

Farm pond black bass caught by Elbert W. Sly of Triangle, Virginia.

Although a fairly large bass, weighing 6 pounds, 11 ounces, and 22 5/8 inches long, such fish as this are being caught throughout the state.

Southwest Leads in Magazine Sales

During 1951 the Commission's game wardens sold a total of 1,649 subscriptions to *Virginia Wildlife*. The Southwest District led the sales as shown by the districts sales: Southwest—705; Piedmont—555; Northwest—222; Tidewater—120; Potomac—47.

We wish to express our appreciation for the work and cooperation shown by all the wardens throughout the State in the past year.

BENNETT NAMED ASSISTANT TO SECRETARY BRANNAN

Dr. Hugh H. Bennett, the father of soil conservation in America and chief of the Soil Conservation Service since it was established by Congress in 1935, has been named as special assistant to the Secretary of Agriculture, the Wildlife Management Institute reports.

Dr. Bennett will be in charge of conservation and resource matters in his new capacity. In announcing Dr. Bennett's appointment, Secretary Brannan stated that he was looking forward to the use of Dr. Bennett's wide and rich experience on his staff "as the greater honor he could bestow on a distingnished public servant rounding out 48 years of achievement for American farmers—and farmers in other parts of the world who have had the benefit of Dr. Bennett's imaginative work with the most basic of all resources—the soil."

Dr. Hugh H. Bennett

Succeeding Dr. Bennett as chief of the Soil Conservation Service is Dr. Robert M. Salter, who has been chief, since 1942, of the Bureau of Plant Industry, Soils, and Agricultural Engineering. In 1940 he was director of the North Carolina Agricultural Experiment Station and for 20 years prior had devoted his time to soils work at Ohio State College.

A fellow and past president of the American Society of Agronomy, he has held prominent posts in many other technical organizations and societies.

NEW BIRD CHECKLIST

A new book on Virginia birds, listing all the birds occurring in Virginia, with full information on their status within the state, will make its appearance on March 1, 1952. The book, which is being sponsored by the Virginia Society of Ornithology, will be entitled *A Checklist of the Birds of Virginia.* Author of the work is Dr. J. J. Murray, of Lexington, editor of the Society's journal, *The Raven*, who has long been recognized as the outstanding authority on all matters relating to the distribution of birds in Virginia.

The *Checklist* is not designed as a book on birds in general, and hence should not be confused with any of the other bird books which have recently appeared. It will deal exclusively with the birds known to occur in Virginia, or to have occurred in the past. Each of the four hundred-odd species and subspecies of birds which have been recorded within the State's boundaries will be listed, together with complete information about their occurrence and distribution in the state. For each kind of bird, its status in Virginia—whether permanent resident, summer or winter resident, migrant, or accidental visitor—frequency of occurrence, and range within the state will be described in full, insofar as available records permit. The *Checklist* will thus be a handy reference guide to the bird life of the state.

Such information has heretofore been almost impossible to obtain, as there is at present no complete treatment of the birds of Virginia in print. The only previous publication of this nature was William Cabell Rives' *Catalogue of the Birds of the Virginias*, published in 1890, which is now completely out of date. Harold H. Bailey's *Birds of Virginia* deals only with those birds which breed within the state, and has long been out of print, having been published in 1913. The *Checklist* thus represents the only work of its kind available and will be indispensable for all those interested in Virginia birds.

It should be noted that the *Checklist* does not duplicate, or compete with, the booklet entitled *Birdlife of Virginia* published by the Commission of Game and Inland Fisheries. The latter is a short general introduction to the whole subject of birds and bird study, with special reference to the more common birds of Virginia. It does not, however, within its necessarily brief compass, attempt to describe in detail the occurrence and distribution of all the State's birds. The *Checklist*, restricting itself to information of this latter type, thus complements, rather than duplicating, the Commission's publication.

Price of the book will be $1.00 if ordered prior to the date of publication, which will be March 1. After that date, the price will be $1.50. All those wishing to order copies in advance of publication should send their orders to A. O. English, 2803 Rosalind Avenue S.W., Roanoke, Virginia.

BIG LEVELS HUNT SUPPLIES DEER MANAGEMENT INFORMATION

Information collected during the managed hunt on Big Levels by the George Washington National Forest is being assembled to help Game Technicians and Forest Service officials in planning deer management policies for west of the Blue Ridge.

A total of 120 deer were killed on the Big Levels Refuge during the five day season. The deer were weighed and aged at the check stations by members of the Virginia Cooperative Wildlife Research Unit. The oldest deer killed was an 8½ year old buck, weighing 140 pounds. Forty-four deer six months old were harvested, the lightest weighing 22 pounds. Eighty-seven percent of the deer shot by the hunters were in the age classes of 3½ years and under. Three and three-quarter tons of venison were taken home from this 30,000 acre refuge, with the average deer weighing 65 pounds.

Five hundred and thirty-two of the six hundred and fifty permittees appeared for the hunt. Hunter success was highest the first day, with one out of two hunters getting his deer. Hunter success for the week was one hunter out of four, much better than the rest of the Forest. The hunters averaged 8¼ hours hunting time each. A total of 4,396 hours recreation was provided to those sportsmen receiving permits.

While four bear were seen by the hunters during the week, none were killed. Expectations were that several bear would be killed in this refuge that has been closed to all hunting since 1936.

Four gangs of turkeys were discovered in the refuge by the hunters, although turkey hunting was not permitted during this "Big Game" season.

The buck-doe ratio in the area does not appear to be unfavorable. Based on game observed by the hunters, they saw one buck for every four does. While naturalists maintain bucks and does are born on a 50-50 sex ratio, the number of bucks to does in the fawn age class indicated 1 buck to 1½ does. Whether this is significant of unfavorable food conditions or not will take further analysis and more observations in future years to determine if this was just happenstance this year.

The harvesting this year of one deer to 250 acres in the Big Levels Refuge is a conservative start to prove by experiment that a more liberal attitude toward deer hunting is becoming necessary west of the Blue Ridge. Big Levels has functioned as a wildlife laboratory in the past and again is fulfilling the purpose for which it was established. The sportsmen, by participation and observation, are helping prove wildlife management theories. By protecting the deer from out of season poaching we can have more liberal seasons and bag limits during the season.

J. B. WEST HONORED BY LAW ENFORCEMENT

J. B. West, supervising game warden from the Tidewater District, who is due to retire in the near future, was honored at a gift presentation ceremony in the office of the Game Commission on December 4, by members of the law enforcement division and other members of the Commission, for his 26 years of warden service.

Commission photo by Kesteloo

J. B. West at presentation ceremony in Richmond. Man on right is Congressman Abbott.

The presentation took place in the Commission hearing-room in Richmond. M. W. Kesterson, chief of the Commission's law enforcement division, introduced Congressman Watkins M. Abbott of the Fourth Congressional District, who, after a very appropriate and fitting address, presented to Mr. West a gold watch from the retired wardens of the Tidewater District, and a beautiful silver service from Mr. Kesterson, the supervising wardens, and the wardens of Mr. West's staff.

UNUSUAL KILL AND FREEZE

C. Brooks Faison of Surry County reports that his prize buck—a 161-pounder that took first place in the Virginia Peninsula Sportsmen's Association Big Game Trophy Contest for 1950—froze over solid on the day of the kill. When propped up beside the car, the deer took life form again—it was that cold.

C. Brooks Faison (right) and friend pose with unusual buck killed in Surry County.

The deer was taken with a 20-gauge shotgun.

FEBRUARY AUTHORS

DR. PAUL B. SEARS, *The Intangible Values of Conservation*, is Professor of Conservation, Yale University, New Haven, Conn.

HILBERT R. SIEGLER, *A Challenge to the Buck Law*, is wildlife biologist of the New Hampshire Fish and Game Department in Concord.

CHARLES GILCHRIST, JR., *Hog Island Waterfowl Refuge*, is a Commission game technician located at Bacon's Castle, Va.

NED THORNTON, *What Woodland Roads Mean to Wildlife Management*, is assistant chief of the Commission's game division.

for
Students
Teachers
Parents

Wildlife Ramblings

Have you ever wanted to watch wildflowers blossom or have green moss inside your school room? This can be done very easily and at little cost. Build your own terrarium!

The only materials you need will be six 8″ x 10″ panes of glass. and a 5 yd. roll of 1″ adhesive tape.

After you have the materials. place four panes of glass on a table, with the first ten inch side horizontal and the second ten inch side vertical. Follow the same pattern on the other two panes, separating them slightly farther than the thickness of the glass.

Cut six 10″ pieces of tape, seven 8″ pieces, and one 3″ piece and lay where they can be reached easily. Crease each piece of tape lengthwise. through the middle, folding it with the cloth side of the tape inside. This will help in placing the pieces of tape straight on the glass.

Now fasten panes together with 8″ pieces of tape, and paste half of the width of another piece on the end pane. *Rub the tape hard.* Stand the terrarium up and fasten together. Adjust the four sides so that the ends of the long sides are inside the edges of the end pieces. This now gives us a box-like form.

To fit the bottom in place, turn the terrarium upside down so that it stands on the projecting ends of the two pieces of glass forming the ends of the terrarium. Put the bottom on and fasten it, taping all four sides. Turn it upright, ready for the cover.

It is advisable to place a tab in the center of one of the long edges of the cover, so that it may be lifted easily. For this use the 3″ piece of tape, attaching about a half-inch of one end to the underside of the cover glass, at the center of one long side. Attach an equal length of the other end of the tape just above the first to the upper side of the glass. Bind the edge, on which the tab has been placed, with a 10″ piece of tape, in the middle of which a longitudinal slit about an inch has been cut through which the tab may be slipped.

Next, place the cover in place on the terrarium, so that the long edge, which

"Takes your breath away, doesn't it?"

is to be fastened to the terrarium, rests on the top edge of one side. Fasten the cover and the side together with another 10″ piece of tape which forms a hinge. The last 10″ piece of tape is used to bind the upper edge of the side on which the cover rests. *Rub all seams hard.*

Now the terrarium is ready to use. Place a layer, about an inch thick, of small pebbles and coarse soil on the bottom. Over this put a layer of the kind of soil needed for the plant life you wish to grow in your terrarium.

Book Reviews

TOMMY TROUT, By R. W. Eschmeyer. Published by Fisherman Press, Inc., Oxford, Ohio; 48 pp., illus., price $1.25.

The second of a series of children's books, which is simply written, conveying the important facts about the trout, including its life history, its needs, and its enemies, is told accurately in an informal, pleasing and convincing manner.

Tommy Trout should do much to fill the great need in juvenile conservation education.

WILDLIFE IN COLOR, by Roger Tory Peterson. Published by Houghton-Mifflin Company, Boston, Massachusetts, 1951; 191 pp., color plates; price $3.00.

Here is a beautifully illustrated introduction to the out-of-doors and a fitting preface to Roger Tory Peterson's other famous Field Guides.

Wildlife in Color is one of the most beautiful publications received by the Game Commission in years. Its series of beautiful color paintings were originally reproduced as a series of Poster Stamps between the years 1939-1951 by the National Wildlife Federation.

This excellent book deviates from the traditional manner of depicting wildlife by arranging the species according to communities. The closely integrated text, with beautiful pictures, describes all of varied habitats of North America in terms of the trees and flowers that grow there; the mammals, birds and butterflies that live among them; the fish and other wildlife of the teeming waters. The result is a vivid and informative cross-section of beautiful outdoor America. *A must edition to the personal library of every outdoor enthusiast.*

The Wildlife Essay Contest closes February 28. Has your school entered?

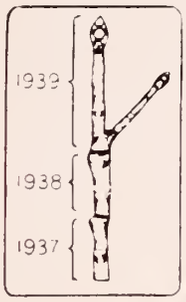
* * *

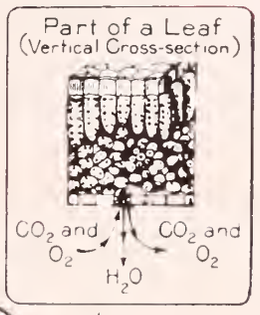
Birdlife of Virginia is still available from the Commission at $.25 per copy.

HOW A TREE GROWS

Trees increase each year in height and spread of branches by adding on a new growth of twigs

Light and heat are required by the leaves in the preparation of food obtained from the air and soil. The leaves give off moisture by transpiration.





CROWN

TRUNK

ROOTS

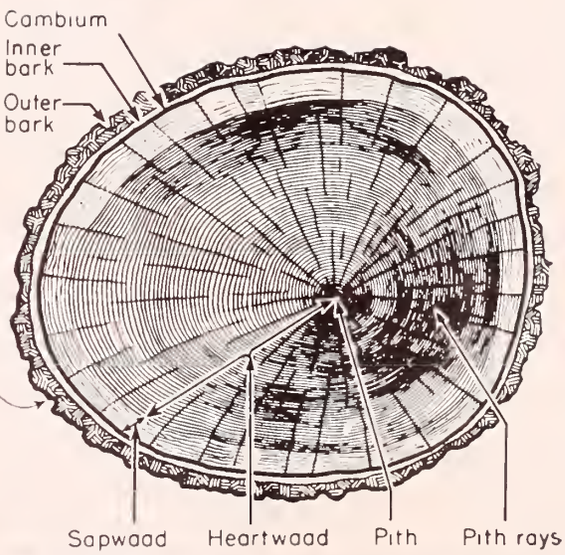
Heartwood (inactive) gives strength.

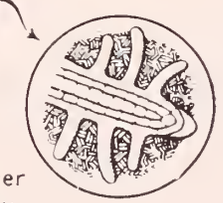
Sapwood (xylem) carries sap from root to leaves

Cambium (layer of cells where growth in diameter occurs) builds tissues-wood inside and bark outside

Inner bark (phloem) carries food made in the leaves down to the branches, trunk, and roots.

Outer bark protects tree from injuries.



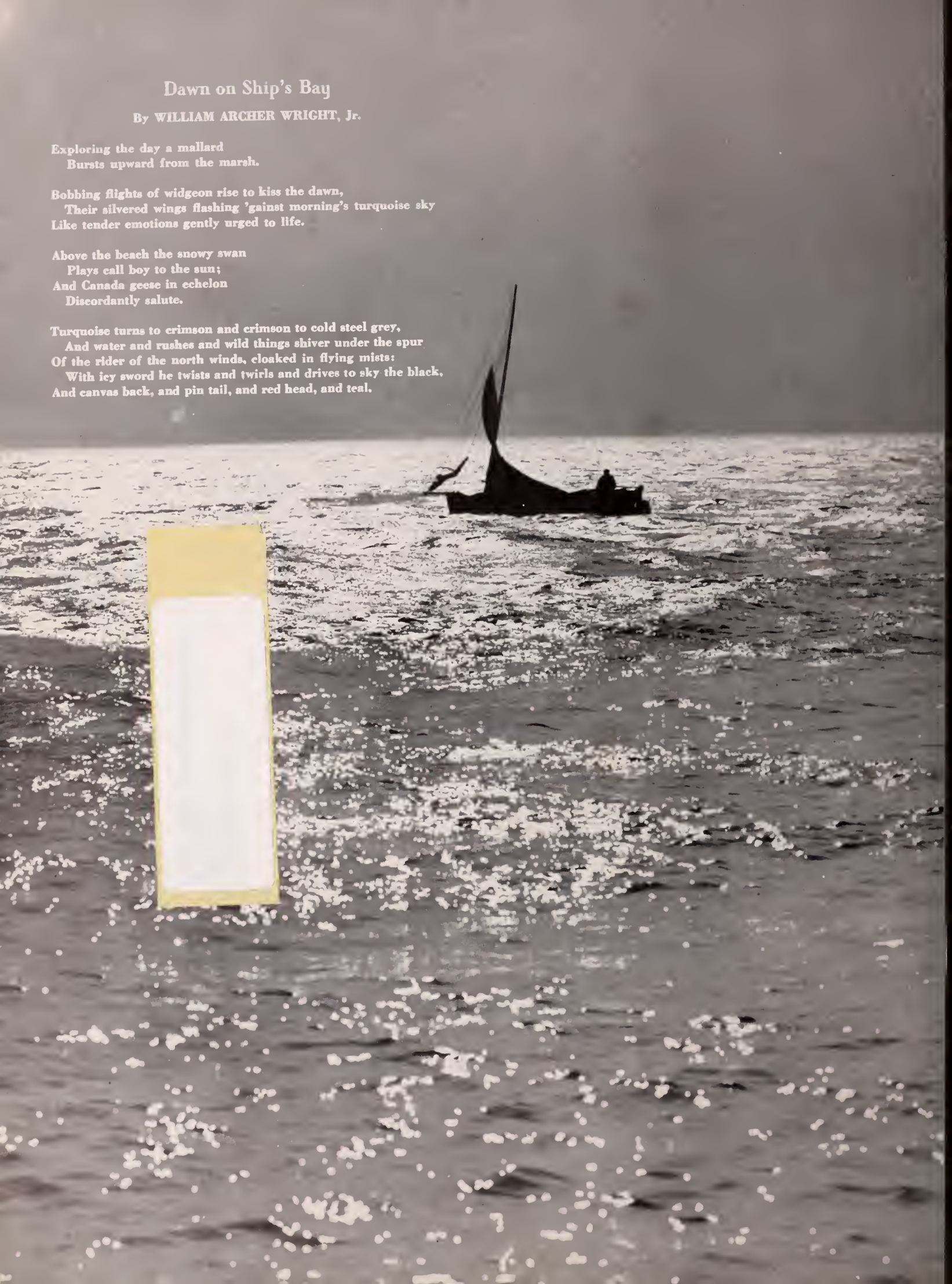


Root hairs take up water containing small quantity of minerals in solution.

Taproot

The buds, root tips, and cambium layer are the growing parts. The tree takes in oxygen over its entire surface through breathing pores on leaves, twigs, branches, trunk, and roots.

Courtesy U. S. Forest Service



Dawn on Ship's Bay

By WILLIAM ARCHER WRIGHT, Jr.

Exploring the day a mallard
  Bursts upward from the marsh.

Bobbing flights of widgeon rise to kiss the dawn,
  Their silvered wings flashing 'gainst morning's turquoise sky
Like tender emotions gently urged to life.

Above the beach the snowy swan
  Plays call boy to the sun;
And Canada geese in echelon
  Discordantly salute.

Turquoise turns to crimson and crimson to cold steel grey,
  And water and rushes and wild things shiver under the spur
Of the rider of the north winds, cloaked in flying mists:
  With icy sword he twists and twirls and drives to sky the black,
And canvas back, and pin tail, and red head, and teal.